CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 96-161
UPDATED WASTE DISCHARGE REQUIREMENTS AND
RESCISSION OF BOARD ORDER 91-023

ACME FILL CORPORATION,
MARTINEZ, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

SITE OWNER, OPERATOR, AND LOCATION

1. Acme Fill Corporation, hereinafter called the Discharger, owns and operates the Acme Sanitary Landfill. The landfill site is located near Martinez, Contra Costa County, immediately southwest of the congruence of Waterfront Road and Walnut Creek Flood Control Channel, about 1 mile east of the intersection of Interstate I-680 and Waterfront Road as shown in **Figure 1**, which is incorporated herein and made part of this Order. The address of Acme Landfill is 950 Waterbird Way, Martinez, California, 94553.

2. The total area of the landfill (defined as the land within the property boundaries) is approximately 516 acres. Different fill areas at the landfill include three separate parcels, designated as the North Parcel, East Parcel, and the South Parcel. The East Parcel is the focus of this Order. The East Parcel, which covers approximately 89 acres, is an active site and is permitted to accept municipal waste. The Discharger submitted East Parcel Revised Preliminary Closure and Postclosure Plans dated January 5, 1996, Revision I Preliminary Closure and Post Closure plans dated June 20, 1996, intended to replace the East Parcel Final Closure and Postclosure Plans originally submitted on June 24, 1994.

PURPOSE OF THE ORDER

3. The primary objectives of this Order are to: 1) establish a time frame for closure of the East Parcel; 2) establish requirements for closure design and construction and postclosure monitoring of the parcel; 3) define the types of wastes and areas which may accept wastes during the closure process; 4) remove the interim transfer station prior to closure of the landfill; 5) revise the groundwater and leachate monitoring programs; 6) reflect information acquired from investigations conducted since the issuance of CAO Order No. 95-226; 7) and bring the site into compliance with the current regulations of Article 5,

Chapter 15, Division 3, Title 23 of the California Code of Regulations (CCR).

4. There has been historical and recent evidence and observation of leachate seepage and releases from the East Parcel to areas beyond the toe of the parcel. The Discharger has not implemented measures, to date, that demonstrate that leachate seepage or releases are being adequately controlled. This Order requires implementation of leachate control measures and landfill closure. Acme has established a funding mechanism that provides financial assurance for the East Parcel and the North Parcel closure. This mechanism provides funds for North Parcel closure during the next few years but does not begin to provide funds for East Parcel closure measures until July, 2001. Therefore, funding for significant closure measures for the East Parcel will not be available until that time.

PERMIT HISTORY

5. The regulatory history for issuance of Waste Discharge Requirements (WDR) at this facility by the Board is as follows:

   a) On April 20, 1976, the Board adopted Order No. 76-36 which authorized disposal in the North and South Parcels and prohibited disposal of wastes onto what is now known as the East Parcel.

   b) On April 18, 1984, the Board adopted NPDES permit CAD0028754, Order No. 84-18 which authorized expansion for a Class II-2 landfill into the wetland areas of the East Parcel and included requirements for discharge to surface or groundwater.

   c) On August 17, 1989, the Board adopted Order No. 89-077. The Order classified the North, South and East Parcels as Class III Waste Managements Units as required by Chapter 15, Title 23, Article 3, Subsections 2510 and 2530 of the California Code of Regulations. The Order required the submittal of a hydrogeologic assessment report, closure plan and post closure monitoring plan for the North, South and East Parcels.

   d) On February 20, 1991 the Board adopted Order No. 91-023 that required continued operation and closure of the landfill parcels. Further, the Order established closure requirements for the facility requiring control and management of leachate to prevent degradation of state waters.

   e) On December 16, 1992 the Board adopted CAO No. 92-158 establishing a time schedule for submittal of technical reports documenting the extraction, treatment

and discharge of leachate from the North Parcel. Prior to the adoption of the CAO, the Board imposed an administrative civil liability (ACL) in the amount of $104,800 for failure to submit a technical report documenting the installation of a leachate recovery and collection system for the North Parcel.

f) On June 16, 1993 the Board adopted Amended CAO No. 93-059 establishing a revised time schedule for submittal of technical reports documenting the extraction, treatment and discharge of leachate from the North Parcel at rates necessary to eliminate the leachate mound within four years and to accomplish leachate level control as necessary for the East and South Parcels.

g) On November 15, 1995 the Board adopted CAO No. 95-226 establishing final requirements for leachate extraction rates and leachate level goals for the North and East Parcels. Prior to the adoption of the CAO, the Board imposed an administrative civil liability (ACL) in the amount of $37,150 for failure to submit a technical report documenting the extraction of treatment of leachate from North Parcel at a minimum flow rate of 25 gallons per minute.

6. The Discharger has submitted a Report of Waste Discharge for the East Parcel dated July 26, 1996.

SITE DESCRIPTION AND HISTORY

7. The East Parcel is an active unlined Class III solid waste disposal site located near Martinez, Contra Costa County, California. The East Parcel is surrounded by Walnut Creek and Pacheco Creek on the northern and eastern sides, IT Vine Hill on the southern side and Waterfront Road on the western side of the parcel. The East Parcel fill occupies approximately 89 acres of a 516 acre landfill owned by the Acme Fill Corporation. The East Parcel fill is located over a marsh area containing deposits of San Francisco Bay mud and peat.

8. The April 1984 WDR approved the disposal of waste into the 89-acre East Parcel. The East Parcel consists of 6 refuse cells that were constructed between 1984 and 1985. Acme has been accepting waste in the East Parcel since 1984. The parcel is the current disposal area for municipal and construction wastes in the then permitted 97 acre fill area with a fill capacity of approximately 4.2 million cubic yards of waste at closure (Harding Lawson Associates, Closure Plan, June 30, 1988). Recent topographic survey maps measure 89 acres of fill area with an estimated air space volume of 5 million cubic yards. The estimated in-place volume of landfilled wastes at the site is said to be 4.8 million cubic

yards (Appendix M, 1996 East Parcel Preliminary Closure Plans). The fill elevation was planned to be approximately 60 feet mean sea level (MSL) with side slopes ranging from 6:1 to 14:1 (horizontal to vertical) (Revised East Parcel Preliminary Closure Plans, Revision No. 1, June 20, 1996).

WASTES AND THEIR CLASSIFICATION

9. The Discharger is presently permitted to accept municipal solid waste, uncompacted green waste, construction and demolition debris, and other bulky waste. This Order specifically prohibits the acceptance of municipal solid waste.

10. No hazardous wastes are permitted to be accepted for disposal at the parcel.

GEOLOGY

11. The Acme Landfill site is located in mud flats and marsh deposits bordering Suisun Bay. Prior to landfill activities, the lowland area of the East Parcel was generally flat with elevations ranging from slightly less than 0 to about 1.5 ft, MSL. The site is underlain by three stratigraphic units identified as the Younger Bay mud, Older Bay mud, and bedrock of the Panoche formation. Characteristics of the different geologic units include:

- Younger Bay mud: The Younger Bay mud is generally about 50 to 65 feet thick in the vicinity of the East Parcel and consists of soft, dark gray organic silty clay, with local peat layers up to 30 feet thick. The clay and peat are very soft and compressible. Occasional lenses of fine-grained silty sand have been encountered in some borings. The Younger Bay mud is typically saturated to the ground surface.

- Older Bay mud: The Older Bay mud deposits consist of alternating clay, silt, sandy silt, and silty sand layers, with occasional layers of sand and gravel. The thickness of the Older Bay mud varies from about 100 to more than 300 feet. The Older Bay mud rests on an erosional unconformity with considerable topographic relief, causing the wide variation in thickness.

- Bedrock: Bedrock of the Cretaceous age Panoche Formation underlies the Older Bay mud at depth. The contact between Older Bay mud and bedrock is an erosional unconformity with substantial topographic relief, resulting both from

tectonic movement and erosion prior to deposition of the Older Bay mud. This contact occurs at depths from 160 feet (near the west side of the parcel) to more than 400 feet (near the east side of the parcel). The Panoche formation bedrock in this area consists of mudstone, siltstone, and sandstone.

12. Structure: Major structural features associated with the bedrock are the Mt. Diablo anticline and the Concord fault. The Concord Fault System consists of northwest-trending right-lateral faults which have been mapped as being active or potentially active (Sharp, 1973). The Avon segment (western trace) of the Concord Fault is inferred to pass through the East Parcel. This segment has been definitively located in the town of Concord, near Highway 4, approximately 2 miles south of the East Parcel. Moderate earthquakes associated with movement of the Concord Fault include a Magnitude 5.4 event in 1955, a Magnitude 4.1 event in 1958, and a Magnitude 3.9 event in 1963 (Hydrogeologic Assessment, Volume 1, December 1989).

13. Six slope inclinometers are currently monitored on the East Parcel. Slope inclinometers are monitored on a semi-annual basis to monitor creep deformation and/or deflection of the younger bay mud that could be indicative of slope or parcel instability. Past monitoring indicates that a shear plane exists at a depth of approximately 40 feet below the ground surface beneath the north and northeast corners of the parcel rendering several inclinometers unusable. The Annual Self_Monitoring Report for the calendar year 1995 reports that several East Parcel inclinometers have been taken out of service due to subsurface movements that have deformed the inclinometer casing to the extent that it is not possible to pass the inclinometer monitoring probe past the zone of deformation without undue risk of instrument loss. The damaged inclinometers have been replaced. The Discharger has not demonstrated if movement recorded by the slope inclinometer could cause displacement of the proposed leachate collection and recovery system during the post closure period of the East Parcel.

14. Acme has submitted to Contra Costa County Health Services Department (CCCHSD) a proposal to postpone the landfill closure for about five years and to continue waste filling within the East Parcel of the landfill at a rate of 150 tons per day.

15. The County (CCCHSD) has contracted Golder Associates, Inc. to review Acme 1996 closure plans for the East Parcel to evaluate the impacts of additional wastes to the parcel. In a report submitted by Golder Associates to CCCHSD dated August 15, 1996, the report states " If refuse is added as proposed, depending on the rate of fill placement, the static factor of safety may fall even further below 1.5, large lateral movements and slope failures may occur in the northeast and northwest corners of the site, and lateral deformations greater than what is presently may occur during the design earthquake".

While Acme disagrees with the Golder Associates Report, the potential for slope or subsurface failure is sufficiently significant that additional wastes should not be accepted in the north and northeast portions of the East Parcel.

SURFACE AND GROUNDWATER

16. Surface Water: The Acme site lies along the Northwestern edge of the Walnut Creek/Pacheco Creek drainage basin. The basin is approximately 1 mile wide in the Acme area but opens up toward northerly Suisun Bay, the discharge point for Walnut Creek. Most surface water runoff from the East Parcel drains to the wetlands east of the parcel, where it evaporates or ultimately flows to Walnut Creek.

17. Groundwater: Acme Landfill is located in an area described as the Bay Plain which includes a tidal marsh with ground surface elevations less than 5 feet mean sea level (MSL). Horizontal hydraulic conductivity for the Younger Bay mud ranges from about 3 x 10^{-3} cm/sec to about 2 x 10^{-7} cm/sec. Older Bay mud values range from a high of 8 x 10^{-2} cm/sec to a low of 3 x 10^{-6} cm/sec the lowest values came from a silty clay layer at the top of the unit). Hydraulic Conductivity values from the bedrock vary from a high of 1 x 10^{-2} cm/sec to a low of 2 x 10^{-9} cm/sec. Vertical hydraulic conductivities (as measured by laboratory testing of core samples, CH2MHILL, 1993) are typically much lower than the horizontal hydraulic conductivity values. For example, the geometric mean value for Younger Bay mud is 8 x 10^{-8} cm/sec; for the Older Bay mud, 5 x 10^{-7} cm/sec; and for the bedrock, 1 x 10^{-7} cm/sec. Groundwater flow patterns indicate that groundwater discharges to Suisun Bay.

18. Beneficial Uses: The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20 and November 13, 1995, respectively. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

The beneficial uses for Suisun Bay in the vicinity of the site are as follows:

- Commercial and sport fishing;
- Estuarine and Wildlife Habitat;
- Industrial Service Supply;

- Fish Migration and Spawning;
- Navigation;
- Preservation of rare and endangered species;
- Contact and non-contact recreation;

The existing and potential beneficial uses for Walnut Creek are as follows:

- Cold Freshwater Habitat;
- Fish Migration;
- Contact and Non-Contact Water Recreation;
- Fish Spawning;
- Warm Freshwater Habitat;
- Wildlife Habitat;

The potential beneficial uses of local groundwaters are as follows:

- Agricultural water supply;
- Industrial process and service supply; and
- Discharge to Suisun Bay and wetlands surrounding the site.

19. Historic Background groundwater quality: The establishment of background groundwater quality wells at the site is difficult as the groundwater flow in the uppermost water-bearing unit (the Younger Bay mud) is generally radially outward from the center of the parcel.

20. Groundwater Degradation: Groundwater monitoring wells have detected inorganic and organic constituents identified as constituents of concern (COC's) from constituents identified in the landfill's leachate. The facility is presently in a "Corrective Action" monitoring program as releases to groundwater have been identified.

LEACHATE CHARACTERIZATION AND MONITORING

21. Leachate Characterization and Monitoring: Leachate monitoring wells have been installed within the parcel to measure the leachate elevation levels. Leachate levels are being currently monitored at the landfill on a weekly basis and reported to the Regional Water Board on a monthly basis. Leachate elevations measured in the wells show a continued upward trend of leachate resulting from precipitation, continued addition of wastes and upwelling of groundwater derived from compaction of Younger Bay muds. Due, in part, to the continued acceptance of wastes and lack of final cover, a number of leachate seeps and the ponding of leachate has been observed during the wet weather seasons.

22. Leachate Extraction: Six leachate extraction wells were installed within the East Parcel in April 1994 and a leachate collection / conveyance piping system has recently been completed. Acme estimates approximately 16 million gallons of leachate is present in the East Parcel according to the technical report *Results of Additional Studies to Evaluate Leachate Generation and Treatment Rates* dated August 2, 1993. Sensitivity analysis presented in a report submitted in July 1995 indicate that sustained extraction of 19 gpm should reduce the leachate mound to within 1 ft Mean Sea Level in the Parcel in about 4-1/2 to 10-1/2 years. Acme is planning to treat the extracted leachate at the existing biological treatment plant located on the North parcel and discharge the treated leachate into the Contra Costa County Sanitary Sewer District (CCCSD).

23. Historic Leachate Dischargers: Existence of a leachate mound within the East Parcel is an indication of a leachate buildup, which is caused by introduction of water from precipitation, upwelling of groundwater due to the Younger Bay Mud consolidation, addition of wastes, and lack of an extraction system. Total leachate generation rates from upflow from bay mud consolidation and inflow from precipitation is estimated to be between 8-17 gallons per minute.

24. A number of leachate seeps have been reported and observed by Board staff over the last several wet weather seasons. Evaluation of the quarterly *Self-Monitoring Reports and the Monthly Summary and Status of Leachate Management Activities Reports* indicate that leachate is building up in the East Parcel.

25. Waste acceptance into the East Parcel of the Acme Landfill should be limited to wood waste, green waste and construction debris, to reduce leachate generation and the potential for leachate releases. Scrap metals and white goods may be accepted for recycling and removal, but shall not be landfilled.

26. Acceptance of wastes identified in item 25. above will provide income for continued maintenance, monitoring and leachate treatment until closure funding is available in the year 2001. Such waste can be used as fill to shape the landfill for proper grading in the areas permitted to accept such wastes prior to capping and will not contribute to leachate generation.

CLOSURE DESIGN AND REQUIREMENTS

27. The final cover design is to be consistent with Chapter 15 regulations and shall consist of a two foot of compacted foundation layer, overlain by 1 foot of clay layer and overlain by not less than 1 foot of vegetative soil cover. Engineered alternative designs, which allow for anticipated maintenance and settlement concerns and are demonstrated to provide equivalent protection to the prescribed standards, may be approved by the Executive Officer.

28. Bay Mud Barrier wall: A perimeter leachate clay barrier wall with an approximate permeability of less than 1 x 10^{-6} cm/s was constructed between 1978 and 1984 in response to Board Order Nos. 76 -36 and 84 -18. The clay leachate barrier surrounds the East Parcel fill. The leachate barrier is ineffective in containing leachate based on the groundwater monitoring data of the site. Organic contaminants have been detected in monitoring wells, completed in Younger Bay mud, located on the outside perimeter of the leachate barrier.

REGULATORY CONSIDERATIONS

29. On October 9, 1991, the U.S.EPA promulgated regulations (40 CFR Parts 257 and 258, or Subtitle D) that apply, in California, to Dischargers who own or operate Class II or III landfills at which municipal solid waste is discharged. The majority of the Subtitle D regulations became effective on October 9, 1993.

30. The Regional Board adopted Order No. 93-113 issuing a general amendment of Waste Discharge Requirements to all Municipal Solid Waste Landfills in this Region, including Acme landfill. Order No. 93-113 was issued to bring this Region's Municipal Solid Waste Landfills into compliance with Subtitle D.

31. Federal Regulations [40 Code of Federal Regulations (CFR) Parts, 122, 123, and 124] require specific categories of industrial activities, including landfills, to obtain an NPDES permit for storm water Dischargers. The State Water Resources Control Board (SWRCB) has issued a General Permit for Storm Water Dischargers Associated with Industrial Activities (NPDES Permit No. CAS000001). The Acme landfill is governed by the SWRCB's General Permit.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

32. This action is exempt from the provisions of the CALIFORNIA ENVIRONMENTAL QUALITY ACT pursuant to Section 15301, Title 14 of the California Code of Regulations.

NOTICE AND MEETING

33. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge, and provided them with an opportunity to submit their written views and recommendations.

34. The Board in a public meeting heard and considered all comments pertaining to the site.

IT IS HEREBY ORDERED that the Acme Fill Corporation, their agents, successors and assigns, shall meet the applicable provisions contained in Title 23, Division 3, Chapter 15 of the California Code of Regulations and Division 7 of the California Water Code, and shall comply with the following:

A. PROHIBITIONS

1. The disposal of waste shall not create a pollution or nuisance as defined in Section 13050 (1) and (m) of the California Water Code.

2. Wastes shall not be placed in or allowed to contact ponded water from any source whatsoever.

3. Wastes shall not be disposed of in any position where they can be carried from the disposal site and discharged into waters of the State or of the United States.

4. Hazardous and designated wastes as defined in Sections 2521 and 2522 of Chapter 15, and high moisture content wastes including sewage sludge, septic tank waste, restaurant grease, and wastes containing less than 50% solids, shall not be deposited or stored at the site. The only exception to this prohibition is that the Discharger may store sewage sludge waste for purposes of a composting project, subject to approval by the Executive Officer.

5. No wastes, including but not limited to municipal solid wastes, green wastes, inert waste, white goods(appliances) and construction debris, may be disposed of in any portion of the

permitted unit for which waste has not previously been placed.

6. Leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or of the United States.

7. Wastes shall not be stored upon closed portions of the landfill outside of designated areas (composting, petroleum contaminated soils, waste designated for burial, etc.).

8. The Discharger, or any future owner or operator of this site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

a. Surface Waters:

- Floating, suspended, or deposited macroscopic particulate matter or foam;
- Bottom deposits or aquatic growth;
- Adversely alter temperature, turbidity, or apparent color beyond natural background levels;
- Visible, floating, suspended or deposited oil or other products of petroleum origin; and
- Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Groundwater:

- The groundwater shall not be degraded as a result of the waste disposal operation.

- Untreated leachate from wastes and ponded water containing leachate or in contact with refuse shall not be discharged to waters of the State or the United States. Leachate shall not be recirculated into the landfill parcels.

B. SPECIFICATIONS

1. All reports pursuant to this Order and/or closure of the East Parcel shall be prepared under the supervision of a registered civil engineer, California registered geologist or

certified engineering geologist.

2. Deletion, abandonment, or destruction of wells that are a part of the Discharge Monitoring Program shall not be initiated without prior approval from the Executive Officer.

3. The site shall be protected from any washout or erosion of wastes from inundation which could occur as a result of flooding with a return frequency of 100 years. The waste management unit and containment structures shall be constructed and maintained to prevent, to the greatest extent possible, inundation, erosion, slope failure, washout, and overtopping under 100 year, 24-hour precipitation conditions.

4. The closure of the landfill shall be designed and constructed in conformance with approved East Parcel Closure and Postclosure Plans, Chapter 15, and this Order.

5. Vegetation shall be planted and maintained over the closed landfill. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have rooting depth not in excess of the vegetative layer thickness.

6. The Discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any Discharge Monitoring Program issued by the Executive Officer.

7. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration from the landfill.

8. This Board considers the Discharger to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations during the active life and postclosure maintenance period.

9. The Discharger shall maintain all devices or designed features, installed in accordance with this Order such that they continue to operate as intended without interruption.

10. The Discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.

11. In addition to survey monuments discussed in the item above, additional survey monuments will be required to determine the displacement of any leachate collection and recovery systems installed over the post closure period. These additional survey monuments are necessary due to the past evidence of subsurface displacement. Reporting requirements for these additional monitoring facilities shall be determined pursuant to any Discharge Monitoring Program issued by the Executive Officer.

12. The discharger shall establish an irrevocable closure fund, pursuant to Section 2580 (f) of Chapter 15, and section 18280, Chapter 5, Title 14 of the Integrated Waste Management Board, that will provide sufficient funds to properly close each area of the facility and to provide post closure maintenance for at least 30 years. The actual post-closure maintenance period shall extend indefinitely until the Board determines that the facility is no longer a threat to water quality.

13. The Board shall be notified immediately of any slope failure occurring in the waste management unit. Any failure which threatens the integrity of containment features or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.

14. The Discharger shall submit, within 90 days after the closure of any portion of the landfill, a closure certification report which documents that the area has been closed according to the requirements of this Order and Chapter 15. The Discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations.

15. The Discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.

16. In the event that leachate levels are not significantly lowered and/or maintained in the waste after initiation of operation of the perimeter leachate collection and removal system, the Discharger shall construct a static cut-off wall which shall be placed at such depths into the subsurface to prevent leachate migration or shall take equivalent action, pursuant to Section 2545, Article 4 of Chapter 15. At a minimum, the cut-off wall, if considered, must meet requirements set forth in Chapter 15, Article 3, Section 2533 provisions for Class III waste management unit. Further, the cut-off wall must be keyed into natural geologic material having a horizontal hydraulic conductivity of less than or equal to 1×10^{-6} cm/sec.

17. The Discharger shall maintain and monitor the waste unit so as not to cause a statistically significant difference to exist between water quality parameters at the compliance point

and Water Quality Protection Standards as defined in Section 2550.2 of Article 5. The point of compliance as per Section 2550.5, Article 5 of Chapter 15 is a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit.

18. The Discharger must provide a monitoring network capable of monitoring groundwater elevations and groundwater quality in each of the identified hydrostratigraphic units beneath the site.

19. Materials used to construct leachate collection and extraction system's shall have appropriate physical and chemical properties to ensure the required transmission of leachate over the life of the waste management unit and the postclosure maintenance period.

20. Water used during disposal operations shall be limited to dust control, fire suppression and earthfill moisture conditioning.

21. Surface drainage from tributary areas and internal site drainage from surface and subsurface sources shall not contact or percolate through waste during the post-closure life of the site. Drainage courses constructed over final capped wastes will be underlain with a minimum 5-foot thickness of compacted earthfill or a lined drainage course which offers equivalent protection.

22. The postclosure maintenance period shall continue until the Board determines that remaining wastes in the waste management unit will not pose a threat to waters of the state.

23. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local law; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.

24. This order is subject to Board review and updating, as necessary, to comply with changing state or federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics, in five year increments from the effective date of this order.

CLOSURE REQUIREMENTS

25. Treated soil from onsite or offsite facilities may be used as foundation material for the final

cover. This soil may not be placed in a manner that allows it to come into contact with landfill leachate.

26. The Dischargers shall design, construct, and maintain perimeter levees, the final cover system and containment structures, gas and leachate extraction and containment systems, surface drainage, and other landfill facilities that may impact water quality, to withstand the maximum probable earthquake. These features shall also be designed, constructed, and maintained to preclude failures due to rapid geologic change, subsidence, liquefaction, and tsunamis.

27. All landfill containment systems including, but not limited to, leachate and groundwater monitoring, final cover system, and leachate sumps and extraction system, and surface water drainage, shall be maintained operational for the entire compliance period of the landfill. The compliance period for the parcel shall extend until the waste no longer poses a threat to water quality.

28. As portions of the landfill are closed, the exterior surfaces shall be graded to promote lateral runoff of precipitation. The final cover for the landfill will have a minimum slope of three percent plus an allowance for subsidence. The final cover shall meet all applicable requirements of Article 8 of Chapter 15 and shall be a minimum of 4 feet thick to include, 2 feet of foundation layer, 1 foot minimum of a low permeability clay barrrier, and 1 foot minimum of vegetative soil. An engineered alternative to the final cover may be proposed as acceptable to the Executive Officer.

29. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site and to prevent surface drainage from contacting or percolating through wastes. In addition, during the rainy season when precipitation can be expected, a minimum one foot thickness of low permeability cover shall be maintained over all but the active disposal area of the landfill. The active disposal area shall be confined to the smallest area practical based on the anticipated quantity of waste discharge and other disposal site operations.

30. The interim transfer station occupies six acres and is located on the south end of the East Parcel. The station was not constructed on the final cover of the facility. The station was used between 1989 and 1994 as an interim facility while the now completed permanent transfer was being constructed on a non-landfilled portion of Acme's property. The interim transfer station is to be removed prior to final closure of the facility.

LEACHATE MANAGEMENT REQUIREMENTS

31. All surface leachate piping shall be double walled. Leachate storage facilities shall have double containment systems.

32. Following activation of the leachate pumping system at the parcel, an inward hydraulic gradient shall be permanently established which shall prevent leachate migration offsite. Furthermore, the leachate extraction system shall be operated such that the design elevation of 1 ft MSL or lower will be achieved and maintained in the shortest practicable time. The Leachate Extraction System shall be inspected on a weekly basis, at a minimum.

33. The Leachate Extraction System will be operated and maintained to ensure that leachate can flow freely in the collection sumps. Corrective measures will be taken to assure that the leachate sumps and the extraction system remain operational throughout disposal operations, closure, and the post-closure maintenance periods.

34. Leachate extracted or otherwise generated from any extraction system installed shall be properly treated and disposed of.

35. A perimeter leachate collection and removal system, consisting in part of a perimeter pipe drain installed inboard of the existing East Parcel leachate barrier, shall be constructed as described in the Closure Plan. Measures shall be taken to ensure that leachate in the leachate collection system can flow freely into the leachate collection sumps and that the system will remain operational during the compliance period.

36. The effectiveness of the leachate extraction system will be evaluated, at a minimum, on the basis of groundwater monitoring data generated. Further, monitoring of leachate extraction performance will consist of measuring leachate levels in existing leachate monitoring wells within the parcel, existing or any addition of new groundwater monitoring wells. The leachate shall be contained and extracted as outlined in the CAO Order No. 95-226.

C. PROVISIONS

1. Except as provided in the schedules given below, the Discharger shall comply with this order immediately upon adoption. The Dischargers shall comply with the Prohibitions, Specifications, and Provisions specified below according to the following schedules:

2. The Discharger is limited to accept the following wastes: construction debris and inert

waste. The areas for which limited waste types may be accepted are restricted to the areas denoted on the attached Figure 3. No wastes shall be added on the extreme northern portion or north-east portions of the East Parcel.

3. The Discharger shall submit semi-annual and annual **Discharge Monitoring Reports** by April 30 for the winter/spring reporting period and October 30 for the summer/fall reporting period of each year in accordance with the attached Discharge Monitoring Program. Sample collection shall be at six month intervals. By April 30 of each year the Discharger shall also submit an annual report to the Board covering the previous calendar year as described in Part A of the Discharge Monitoring Program. The semi-annual and annual reports due on the same date may be combined.

REPORT DUE DATE: **Semi-Annual Reports - April 30 and October 30 of Each Year. Annual Reports - April 30 of Each Year**

4. The Discharger shall submit to the Board a **Final Cover/Closure Construction Plan** acceptable to the Executive Officer. This plan will provide for a staged closure that is consistent with the established pay out schedule of the facility's closure insurance fund. Included with this submittal will be documentation of the closure insurance fund and a map depicting areas and denoting dates that portions of the East Parcel final cover will be completed. Also included with this submittal shall be a schedule for providing double containment to surface leachate piping and storage structures. All underground and permanent surface piping shall consist of double walled piping. A revised closure schedule shall be submitted as significant changes occur in the closure process.

REPORT DUE DATE: **3 months from the date of the adoption of this Order, update as schedule changes**

5. The Discharger shall submit to the Board a schedule, acceptable to the Executive Officer, for removal of the interim transfer station located on the south end of the Parcel. The schedule for removal dates shall be prior to the beginning of the final closure activities.

REPORT DUE DATE: **3 months from the date of the adoption of this Order**

6. The Discharger shall submit a complete detailed and updated **Post Earthquake Inspection and Corrective Action Plan,** acceptable to the Executive Officer, to be implemented in the event of any earthquake generating ground shaking of Richter Magnitude 6.5 or greater at or within 30 miles of the facility. The report shall describe the containment features, and groundwater monitoring potentially impacted by the static and seismic deformations of the facility. The plan shall provide for reporting results of the

post earthquake inspection report to the Board within 72 hours of the occurrence of the Magnitude 6.5 or greater at or within 30 miles of the facility. Immediately after an earthquake event causing damage to the facility structures, the corrective action plan shall be implemented and this Board shall be notified of any damage.

REPORT DUE DATE: **3 months from the date of the adoption of this Order**

7. The Discharger shall submit a **Leachate Contingency Plan** acceptable to the Executive Officer. This plan shall be implemented in the event of a leak or spill from any of the leachate handling facilities. The Discharger shall provide immediate notification to the Board and to the Local Enforcement Agency (LEA). The Discharger shall initiate this Corrective Action Plan to stop and contain the migration of pollutants from the site.

REPORT DUE DATE: **3 months from the date of the adoption of this Order**

8. The Discharger shall submit to the Board evidence of an **Irrevocable Closure Fund** or provide other means acceptable to the Executive Officer. This submittal shall be in conjunction with the closure fund established under the requirements of the Integrated Waste Management Board. This Fund is to ensure closure and postclosure maintenance of the East Parcel, pursuant to Section 2580(f) of Chapter 15, and must provide sufficient funds to properly close the parcel and for any postclosure monitoring, leachate management, and maintenance of the site. For purposes of planning the amount of the Fund, the Discharger shall assume a postclosure period of at least 30 years. However, the postclosure maintenance period shall extend as long as the waste pose a threat to water quality.

REPORT DUE DATE: **3 months from the date of the adoption of this Order and every five years thereafter**

9. The Discharger shall submit to the Board a complete and updated **Leachate Management Plan** acceptable to the Executive Officer. This Submittal will provide a complete and detailed description of proposed near and long term leachate handling facilities at the Acme landfill including: surface piping, storage, and containment (both primary and secondary); pumping program/schedule; monitoring locations and frequencies; analytical parameters for continued leachate characterization; transportation and disposal plan; and sampling protocols and rationale supporting proposed program. A schedule with dates for implementation of the leachate management activities shall also be included in this Plan.

REPORT DUE DATE: **Six months from the date of the adoption of this Order**

10. The Discharger shall submit to the Board a complete **Corrective Action Program Evaluation Report** acceptable to the Executive Officer. This Report will document the results and evaluate the effectiveness of corrective measures and monitoring implemented by the Corrective Action Program.

REPORT DUE DATE: **Within two years of completion of final cover**

11. The Discharger shall submit to the Board a complete **Final Closure Construction Details (FCCD)**, as acceptable to the Executive Officer. This Report will include as-built drawing, construction quality assurance results with a written summary and all test results and certification by the Engineer of Record. The report shall include an updated topographic map of the entire East Parcel.

REPORT DUE DATE: **45 days after completion of Final Cover Construction**

12. The Discharger shall submit to the Board a **Monitoring Well Installation Report** acceptable to the Executive Officer that provides well construction details, geologic boring logs, and well development logs for all new monitoring wells (leachate or groundwater) installed as part of the future Groundwater Corrective Action Monitoring Program or any subsequent well installation. Documentation for monitoring wells installed as part of the future well installation activities is due 45 days following completion of well installation activities.

REPORT DUE DATE: **45 days following well installation activities**

13. The Discharger shall stop accepting wastes for disposal on May 15, 2001 after which no additional wastes may be disposed of at the site. Treated soils, as acceptable to the Executive Officer, may be used for the foundation layer of the cap.

14. The Discharger shall remove and relocate any wastes which are discharged in violation of this Order.

15. The Discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of the waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the disposal areas or the ownership of the site.

16. The Discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

17. The Discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.

18. The Discharger shall permit the Board or its authorized representative, upon presentation of credentials:

- Immediate entry upon the premises on which wastes are located or in which any required records are kept;
- Access to copy any records required to be kept under the terms and conditions of this Order;
- Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order or by any other California State Agency; and
- Sampling of any discharge or groundwater governed by this Order.

19. This Board's Order No. 91-023 pertaining to East Parcel is hereby rescinded.

20. The Discharger shall install, at a minimum, two surveyed permanent monuments no later than 90 days after closure of any portion of the landfill.

21. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor groundwater, leachate from the landfill units, and surface waters per any Discharge Monitoring Program established for the facility throughout the post-closure maintenance period.

22. The Discharger shall comply with the Discharge Monitoring Program which is attached to and made part of this Order.

23. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.

24. The Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operations.

25. The owner of the waste management facility shall have the continuing responsibility to assure protection of usable waters from discharged waste during the active life, closure, and post closure maintenance period of the parcel and during subsequent use of the property for other purposes.

26. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.

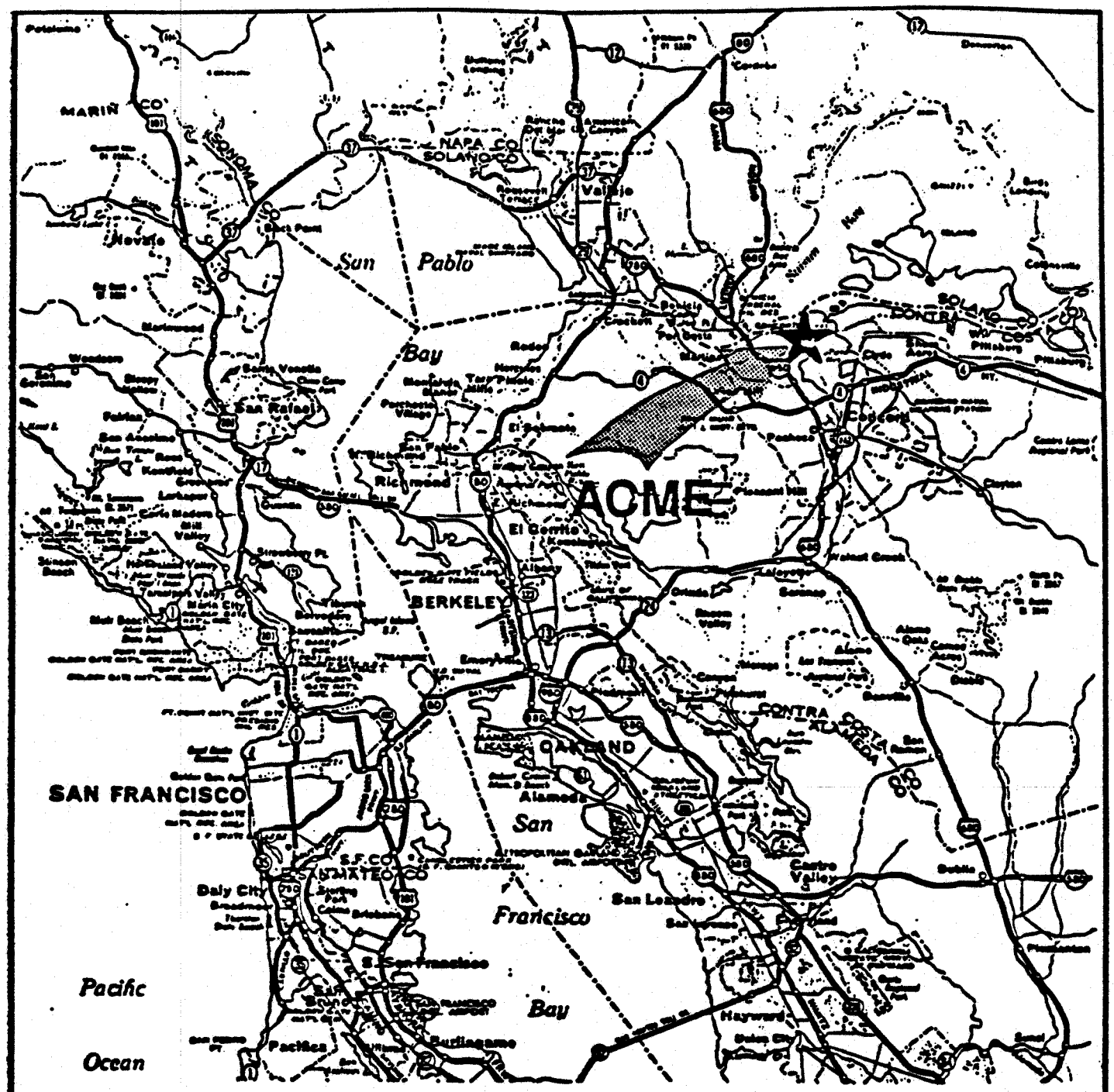
27. This Order is subject to Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 18, 1996.

Lawrence P. Kolb
for

Loretta K. Barsamian
Executive Officer

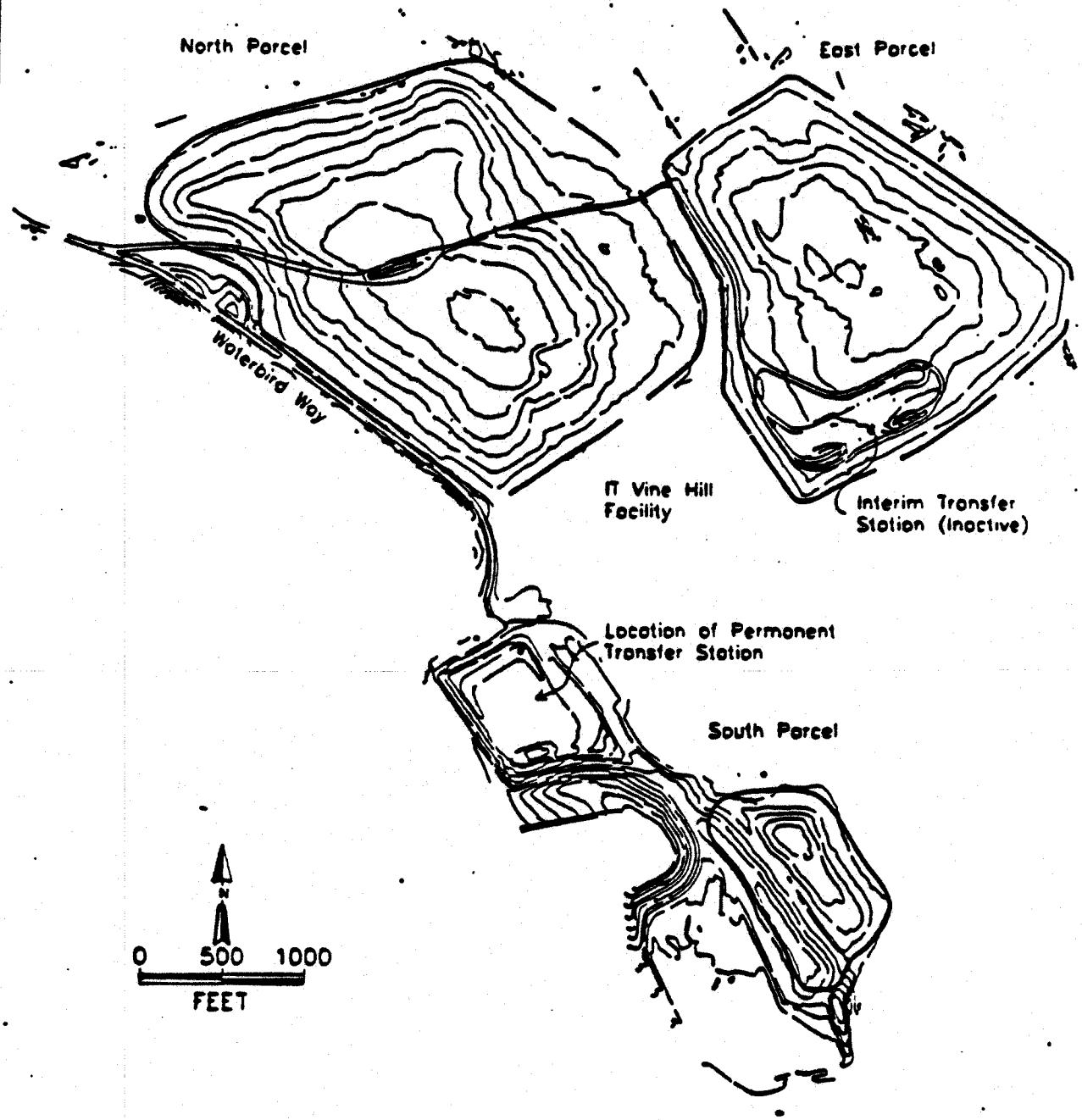
Attachments: Figure 1: Site Location Map
Figure 2: Site Map
Figure 3: Site Map Defining Areas Where Waste May Be Placed



SITE LOCATION MAP

FIGURE 1

ACME LANDFILL
Martinez, California



TITLE:

Site Map

PROJECT NO

FIGURE NO: 2

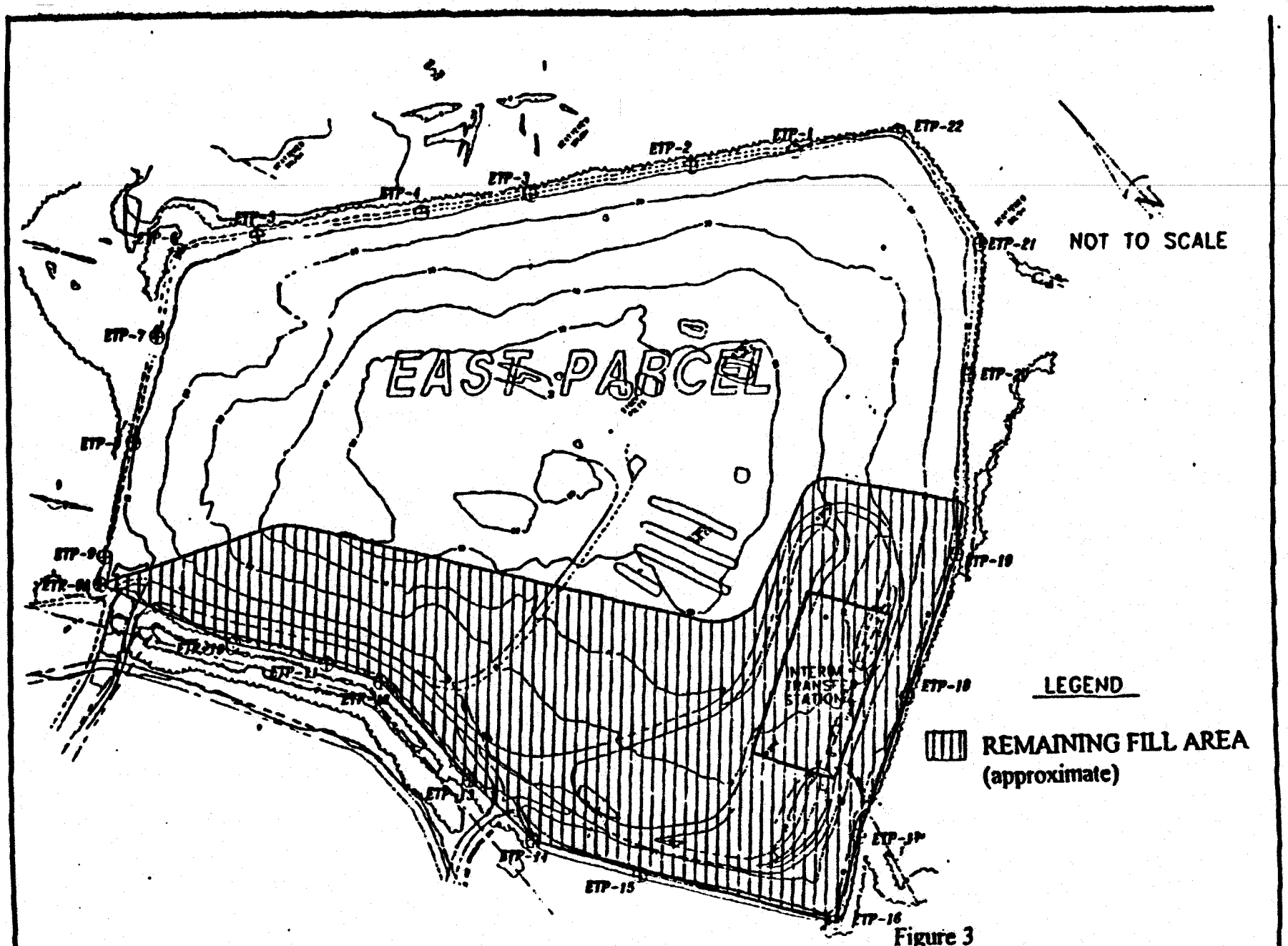


Figure 3
REMAINING REFUSE FILL AREA
ACME LANDFILL

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

DISCHARGE MONITORING PROGRAM

FOR

ACME FILL CORPORATION
CLASS III SOLID WASTE DISPOSAL SITE
MARTINEZ, CONTRA COSTA COUNTY

ORDER NO. 96-161

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Discharge Monitoring Program is issued in accordance with Chapter 15, Article 5.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.

2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, are considered receiving waters.

3. Standard observations refer to:

a. Receiving Waters

   1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
   2) Discoloration and turbidity: description of color, source, and size of affected area.
   3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
   4) Evidence of beneficial use: presence of water associated wildlife.

5) Flow rate.
6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.

b. Perimeter of the waste management unit.

1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.

c. The waste management unit.

1) Evidence of ponded water at any point on the waste management facility.
2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
3) Evidence of erosion and/or daylighted refuse.
4) Standard Analysis (SA) and measurements are listed on Table A (attached)

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The Discharger is required to perform sampling, analyses, and observations in the following media:

1. Groundwater per Section 2550.7(b) and
2. Surface water per Section 2550.7(c)

and per the general monitoring requirements specified in Section 2550.7(e) of Article 5, Chapter 15.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.

2. Date and time of sampling.

3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.

5. Calculation of results.

6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written monitoring reports shall be filed by the 30th day of April and October of each year. In addition an annual report shall be filed as indicated in F.3 below. The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:

1) A graphic description of the velocity and direction of groundwater flow under/around the waste management unit, based upon the past and present water level elevations and pertinent visual observations.

2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well, method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature

conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.

3) A written discussion of the groundwater analyses indicating any change in the quality or characteristics of the groundwater.

4) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.

c. A comprehensive discussion of the compliance record and status, as well as any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the Waste Discharge Requirements and Chapter 1, Title 23.

d. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.

e. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.

2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than the recovery acceptance limits specified in the USEPA method procedures or the laboratory's acceptance limits, if they are more stringent than those in the USEPA method procedures; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

f. An evaluation of the effectiveness of the leachate monitoring or control facilities,

which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

g. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.

h. The quantity and types disposed of during each semi-annual reporting period, and the locations of the disposal operations. Locations of the waste placement shall be depicted on a map showing the area, if any, in which filling has been completed during the previous calendar year.

i. A summary statement describing the findings from the Discharger's periodic load checking/screening program, waste characterization program and any other observational/inspection programs.

j. By April 30 of each year the Discharger shall submit an annual report to the Board covering the previous calendar year. The annual report may incorporate the winter/spring semi-annual report. The annual report shall contain:

1). Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a $3^1/_2$" computer data disk, MS-DOS ASCII format, tabulating the year's data.

2). A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.

3). A map showing the area, if any, in which filling has been completed during the previous calendar year.

4). A written summary of the groundwater analyses indicating any change in the quality of the groundwater.

5). An evaluation of the effectiveness of the leachate monitoring/ control facilities, which includes an evaluation of leachate buildup within the disposal units, a summary of leachate volumes removed from the units, and a discussion of the leachate disposal methods utilized.

2. CONTINGENCY REPORTING

a. A Discharger shall report by telephone of any seepage from the surface of the disposal area immediately after it is discovered. A written report shall be filed with the Board within five days thereafter. This report shall contain the following information:

1) a map showing the location(s) of discharge;
2) An estimate of the flow rate;
3) A description of the nature of the discharge(e.g., all pertinent observations and analyses); and
4) corrective measures underway or proposed.

b. A report shall be made in writing to the Board within seven days of determining that a statistically significant difference occurred at a point of compliance (between a down gradient sample and WQPS). Notification shall indicate what WQPS(s) has/have been exceeded. The Discharger shall immediately re-sample at the compliance point where this difference has been found and re-analyze.

c. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between monitoring results and WQPS(s), the Discharger must submit to the Board an amended Report of Waste Discharge to make appropriate changes to the corrective action program (CAP) as specified in Section 2550.10(h)(j) of Chapter 15.

d. Within 90 days of determining statistically significant evidence of a release, submit to the regional board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 2550.10. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

4. WELL LOGS

A boring log and a monitoring well construction log shall be submitted for each new sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. SURFACE WATER, GROUNDWATER, AND LEACHATE MONITORING - **Report Annually (Surface Water and Leachate), Semiannually (Groundwater)**

i. Surface Water: Surface water monitoring conducted under the NPDES Industrial Storm Water Permit or for discharge of surface water runoff from retention basins shall be submitted as part of the annual report. Additionally, surface water sampling shall be performed at the locations listed in Table A-1. Analytical parameters are listed in Table A-3. Samples shall be collected semi-annually from Walnut Creek and annually from the adjacent wetlands during the winter-spring monitoring period.

ii. Groundwater: The Groundwater Corrective Action Monitoring Program shall consist of semi-annual monitoring at the locations listed in Table A-1. Analytical parameters are listed in Table A-3 (Attached). The Discharger shall analyze for all Subtitle D, Appendix II compounds not listed in Table A-3 once every five years.

Table A-1 - Surface Water and Groundwater Monitoring Points - East Parcel Acme Landfill

Hydrologic Unit	Monitoring Points
Surface Water	1. Walnut Creek, Upstream of East Parcel 2. Walnut Creek, Downstream of East Parcel 3. Standing Water, 24-acre parcel north of East Parcel 4. Standing Water, 300 ft buffer zone east of East Parcel 5. Standing Water, 300 ft buffer zone south of East Parcel 6. Standing Water, west of East Parcel - between North and East Parcels

Groundwater	Monitoring Points
Younger Bay Mud	G-13, G-14, G-16, G-17, G-18, G-19, G-31, MW-122, MW-124, MW-125, PC-10A, PC-9B, PC-13A
Older Bay Mud	PC-9B, PC-10B, PC-11C, PC-12B
Bedrock	PC-11E

iii. **Leachate:** Leachate shall be monitored annually at the locations listed in Table A-2. Analytical parameters are listed in Table A-3 (Attached). The Discharger shall analyze for all Subtitle D, Appendix II compounds not listed in Table A-3, once every five years.

Table A-2 - Leachate Monitoring Points - East Parcel - Acme Landfill

Location	Monitoring Points
Leachate Wells	EPLEW-AE1, EPLEW-AW1, EPLEW-B1, EPLEW-C1, EPLEW-D1, EPLEW-E1

B. WASTE MONITORING - **Observe Monthly, Report Semiannually** (While landfill is active)

i. Record the total volume and weight of waste in cubic yards and tons disposed of at the site during each month showing locations and dimensions on a sketch or map.
ii. Record location and aerial extent of disposal of waste, in cubic yards, with map locations.
iii. Remaining landfill capacity/waste volume in place.

C. FACILITIES MONITORING - **Observe Quarterly, Report Semi-Annually**

The Discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report semiannually. The facilities to be monitored shall include,

but not be limited to:

1. Leachate collection and removal/pumping system;
2. Leachate Management facilities and secondary containment;
3. Perimeter diversion channels and run-on/run-off control features;
4. Final cover system.

D. PHOTO-DOCUMENTATION OF FACILITIES MONITORING - **Observe Quarterly, Report Annually**

The Discharger shall provide photo-documentation of conditions at locations that include, but are not limited to, the landfill facilities listed in Part B.1.C above. Locations from which photographs are taken should be permanent stations such that they can be used in successive reports.

E. ON-SITE OBSERVATIONS

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
V-1 thru V-'n'	Located on the waste disposal area as deli-neated by a grid network.	Standard observations for the waste management unit.	Bi-monthly observations (rainy season), Monthly observations (dry season), Report semiannually.
P-1 thru P-'n' (per-imeter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter.	Bi-monthly observations (rainy season), Monthly observations (dry season), Report semiannually.

A map showing visual and perimeter compliance points (V and P stations) shall be submitted by the Discharger along with the semi-annual monitoring report.

F. SURFACE WATER MONITORING

Surface water monitoring includes surface water samples collected from Walnut Creek and samples of standing water collected from the wetlands around the East Parcel.

Surface water samples shall be collected semiannually from Walnut Creek and the results shall be reported semiannually. Standing water samples shall be collected during the winter-spring monitoring period, with the results included in the annual report.

G. SEEPAGE MONITORING

Seepage monitoring stations include any point at which seepage is found occurring from the disposal area. The landfill perimeter shall be monitored **Weekly** during the winter-spring period and **Monthly** during the summer and fall period according to the following with the results reported **Monthly and Semi-annually**, respectively.

STATION	DESCRIPTION	OBSERVATIONS	FREQUENCY
S-1 thru S-'n'	At any point at which seepage is found occurring from the disposal area.	Standard observations for the perimeter and standard analyses (Table A-3, perform analyses once per seep).	Daily until remedial action is taken and seepage ceases.

H. GROUNDWATER / LEACHATE ELEVATION MONITORING

Groundwater and leachate elevation monitoring shall be conducted at the following locations on a quarterly basis. These wells will change to monthly monitoring following startup of leachate extraction system. The elevation measurements shall be reported in the semi-annual monitoring reports. The leachate wells located within waste may become blocked due to differential settlement. As this occurs, the Discharger shall notify the Board.

Groundwater Elevation Monitoring Wells

Younger Bay Mud: G-13, G-14, G-16, G-17, G-18, G-19, G-21, G-23, G-24, G-30, G-31, G-32, MW-120, MW-121, MW-122, MW-123, MW-124, MW-125, PC-10A, PC-13A

Older Bay Mud: PC-2B, PC-9B, PC-10B, PC-11B, PC-11C, PC-12B

Bedrock: PC-11E, PC-12E, PC-2E

Leachate Elevation Monitoring Wells

In-Waste: EPGR-1, EPGR-7, EPLEW-AE1, EPLEW-AW1, EPLEW-B1, EPLEW-C1, EPLEW-D1, EPLEW-E1

I. LEACHATE EXTRACTION MONITORING

1. The Discharger shall report daily, weekly, monthly, and average daily rates for pumping/removal of leachate from the total system and monthly and average daily rates for each sump area. This information will be provided with the semi-annual monitoring report.
2. Included with each semi-annual report will be an evaluation of the effectiveness of pumping on reduction of leachate levels throughout the East Parcel.

J. LANDFILL GAS CONDENSATE

Landfill gas condensate removed from the landfill's gas collection system shall be transported for disposal at a wastewater treatment or leachate treatment facility. For each condensate monitoring point, the Discharger shall include in the **semi-annual monitoring report** a measurement of the estimated volume of condensate collected, and the **monthly** and **average daily condensate volumes** for each condensate collection point.

K. MONITORING OF ANALYTICAL PARAMETERS

The following field measurements shall be conducted upon adoption of this Order for groundwater, leachate and surface water at the above specified frequencies.

Field: Temperature, pH, specific Conductance, alkalinity, dissolved oxygen, specific gravity and turbidity.

Table A-3 lists analytical parameters for all monitoring locations listed in Tables A-1 and A-2.

TABLE A-3
LIST OF ANALYTICAL PARAMETERS
DISCHARGE MONITORING AND REPORTING PROGRAM
For The East Parcel of the Acme Landfill
Class III Waste Management Facility

1. Analytical parameters for Surface water, Groundwater, Leachate, and Seepage monitoring locations:

PARAMETER	METHOD
pH	9040
Total Organic Carbon (TOC)	415.2
Nitrate Nitrogen	300
Total Kjeldahl Nitrogen (TKN)	351.3
Volatile Organic Compounds (VOC's)	8260

2. Additional analytical parameters for seepage and leachate monitoring:

PARAMETER	METHOD
Ammonia	350.2
Antimony	7041
Arsenic	7061
Cadmium	7131
Chlorinated Herbicides	8151
Chromium	6010
Chemical Oxygen Demand (COD)	410.1
Copper	6010
Cyanide	335.2
Lead	7421
Mercury	7471
Nickel	7510

Organophosphorus Compounds	8141
Pesticides / PCBs	8080
Selenium	7741
Sulfide	9030
SVOCs	8270
Thallium	7841
Total Oil & Grease	413.1/413.2
Zinc	6010

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring and Reporting Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 96-161.

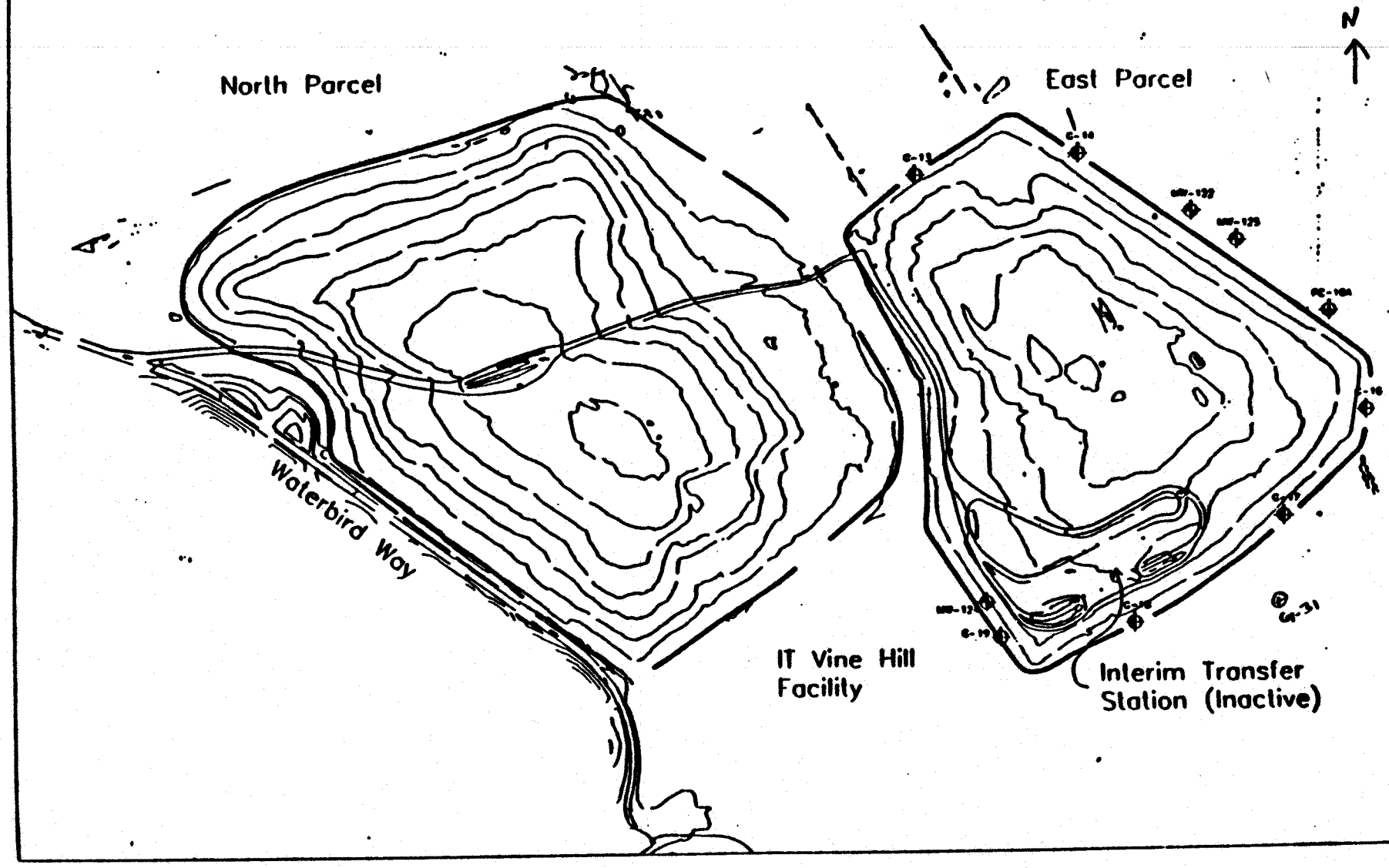
2. Is effective on the date shown below.

3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Date Ordered: December 18, 1996

Loretta K. Barsamian
Executive Officer

Attachment: Figure A-1: Monitoring Well Location Map
Figure A-2: Leachate Well Location MapPart B



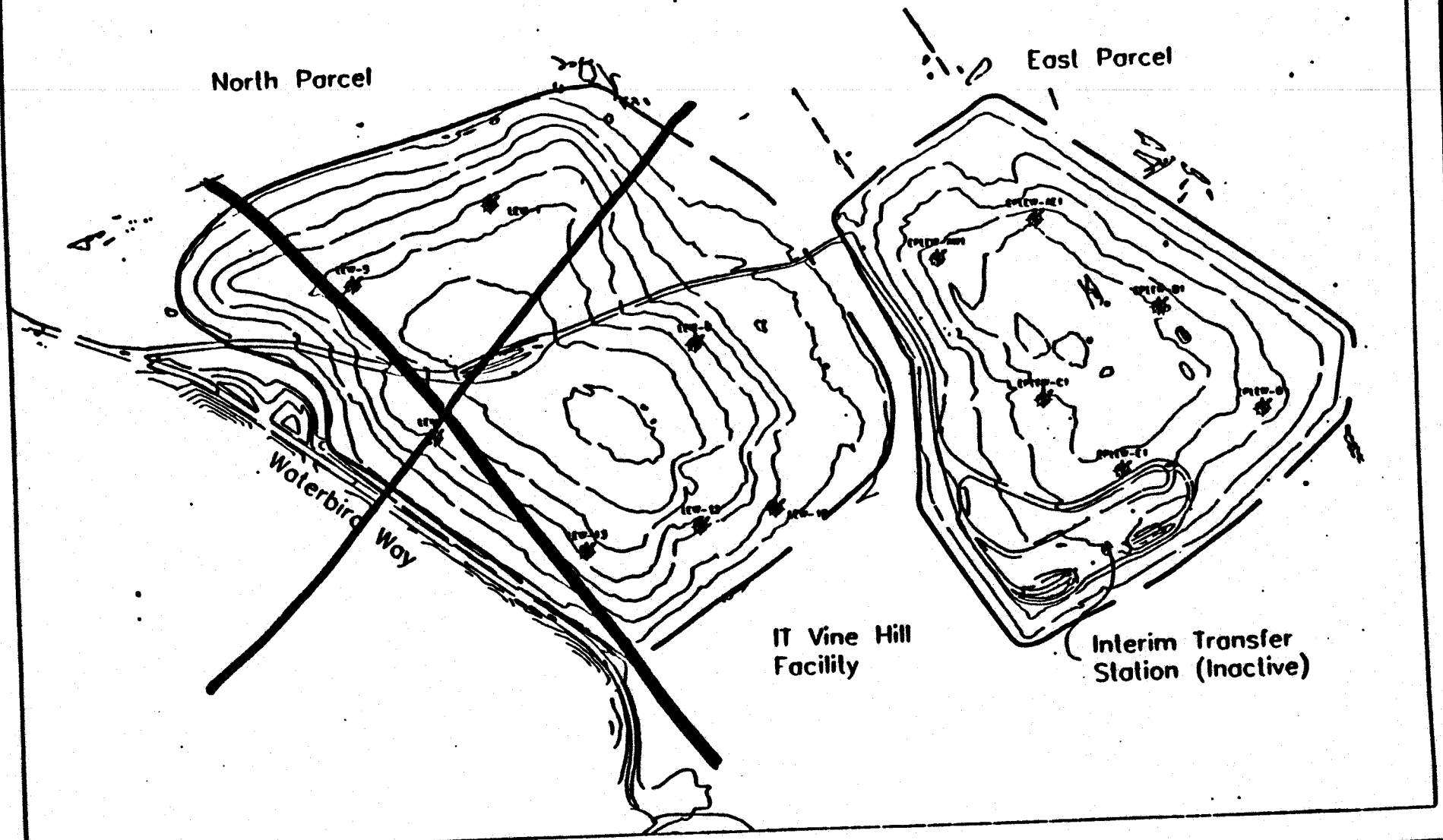
TITLE:

Monitoring Well Location Map

PROJECT NO:

FIGURE NO:

A-1



TITLE:

Leachate Well Location Map

PROJECT NO:

FIGURE NO:

A-2